

What is claimed is:

1. A socket assembly for accommodating an electrical component having a plurality of terminals and for electrically connecting said electrical component to a printed circuit board, comprising:

a socket body having a generally rectangular configuration; and

a plurality of flat plate-like contact pins which are arranged forming a row in parallel along at least one side of said socket body, each of said contact pins having a base portion and a leg portion projected downward from said base portion, said base portion having at one end thereof an upward contact portion for contact to a terminal of said electrical component and also having at the other end thereof a connecting portion for connection to said printed circuit board,

wherein two rows of slits into which said leg portions of said row of contact pins are inserted are arranged in a zigzag manner in said socket body, first ribs for defining the interval of the contact pins inserted into said slits which form the other row are alternately arranged in a zigzag manner so as to form two rows, and contact pins inserted into said slits forming the other row are disposed on said first ribs.

2. A socket assembly as set forth in claim 1, wherein said first and second ribs are arranged in the vicinity of said contact portions of said row-forming contact pins.

-131-

3. A socket assembly as set forth in claim 1, wherein said contact pins have arms which are extended and curved upward from said base portions, and a slider is supported by said base portions and said arms of said row of contact pins and is movable between an open position for accommodating said electrical component and a pressing position for pressing against said electrical component by an elastic force of said arms to bring the terminals of said electrical component into press-contact with said contact portions of said contact pins.

4. A socket assembly as set forth in claim 1, further comprising a pressing cap which is detachably engaged with said socket body so that it presses against an upper surface of said electrical component and brings said terminals of said electrical component into press-contact with said contact portions of said contact pins.

5. A socket assembly for accommodating an electrical component having a plurality of terminals and for electrically connecting said electrical component to a printed circuit board, comprising:

a socket body having a generally rectangular configuration;

a plurality of flat plate-like contact pins which are arranged forming rows in parallel respectively along at least opposite sides of said socket body, each of said contact pins having a base portion and an arm which extends curved upward from said base portion, said base portion having at one end thereof an upward contact portion for contact to a terminal of said electrical component and at

the other end thereof a connecting portion for connection to said printed circuit board; and

pivot cams, each of which is supported by tip portions of said arms of said row-forming contact pins and which can pivot between a position of standing state and a position of a substantially horizontal state, wherein each of said pivot cams retracts from an insertion region for said electrical component in the standing state and presses against said electrical component by an elastic force of said arms of said contact pins in the horizontal state to bring said terminals of said electrical component into contact with said contact portions of said row-forming contact pins.

6. A socket assembly as set forth in claim 5, wherein each of said pivot cams has a standing contact portion which comes into contact with upper surfaces of said base portions of said contact pins at the time of said standing state and a horizontal contact portion which comes into contact with the upper surfaces of said base portions of said contact pins at the time of said substantially horizontal state, and the elastic force of said arms of said contact pins are imparted to said picot cam from the tip portions of said arms in a direction substantially perpendicular to said standing contact portion and a distance from said horizontal contact portion to said electrical component is larger than the distance from the tip portions of said arms to said electrical component.

7. A socket assembly as set forth in claim 5, wherein extension pieces for pivoting said pivot cams are provided on said pivot cams, respectively.

8. A socket assembly for accommodating an electrical component having a plurality of terminal and for electrically connecting the electrical component to a conductor pattern on a printed circuit board, comprising:

a support frame having a generally rectangular configuration which surrounds the periphery said electrical component;

a plurality of flat plate-like contact pins which are arranged forming rows in parallel respectively along at least opposite sides of said socket body, each of said contact pins having a base portion and an arm which extends curved upward from the base portion, said base portion having at one end thereof an upward contact portion for contact to the terminals of said electrical component and at the other end thereof a connecting portion for connection to said conductor pattern of said printed circuit board; and

a plurality of sliders each of which is supported by said base portions and said arms of said row-forming contact pins and is movable between an open position for accommodating said electrical component and a pressing position for pressing against said electrical component by an elastic force of said arms to bring the terminals of said electrical component into contact with said contact portions of said contact pins,

wherein said contact pins are detachably engaged with said support frame so that after said connecting portions of said contact pins are connected and secured to said conductor pattern of said printed circuit board by soldering, said support frame can be detached from said contact pins.

06788/002004/EN8201DIII-US

9. A socket assembly as set forth in claim 8, wherein a plurality of ribs are provided on both inside and outside of said support frame so as to form rows, respectively, and said row-forming contact pins are detachably engaged between each adjoining said ribs inside and outside of said support frame, respectively.

10. A socket assembly as set forth in claim 8, wherein an upper cap for covering an upper surface of the electrical component is detachably attached to said support frame.

11. A socket assembly as set forth in claim 7, 8 or 9, wherein with respect to said circuit board, an upper surface of said support frame has the same height as upper surfaces of said contact pins or a lower height than upper surface of said contact pins.

12. A socket assembly as set forth in claim 8, wherein an upper cap for covering an upper surface of the electrical component is integrally provided on said support frame.

13. A socket assembly as set forth in claim 8, wherein said row-forming contact pins are arranged in a rectangular shape and said sliders respectively held by said row-forming contact pins are formed so that end portions thereof abut against each other at the pressing position.

TOP SECRET

14. A socket assembly as set forth in claim 10 or 12, wherein said upper cap is formed with ribs for defining the interval of said arms of said row of contact pins and is formed with an opening portion adapted for visually confirming said contact portions of said contact pins from above.

15. A socket assembly as set forth in claim 8,
wherein each of said sliders is formed with partition walls
for defining the interval of said row-forming contact pins.

16. A socket assembly as set forth in claim 15, wherein each of said sliders is formed by a substance having a bad wetting property with respect to the soldering and at least a part of said partition wall of each of said sliders is formed so as to cover a section positioned above a soldering section among a sliding region of said contact pin with respect to said partition wall of said slider.

17. A socket assembly as set forth in claim 16, wherein a section of said contact pin positioned above the soldering section among the sliding region of said contact pin sliding along said partition wall of said slider is covered by a substance having a bad wetting property with respect to the soldering.

18. A socket assembly as set forth in claim 8, wherein the pitch and width of at least a part of said connecting portions of said row-forming contact pins are larger than the pitch and width of said contact portions, respectively.

19. A socket assembly as set forth in claim 8 or 18 wherein said contact pins of respective rows are formed by the simultaneous punching and simultaneous bending of one conductive plate.

20. A socket assembly comprising a plurality of contact pins each of which has at one end thereof an external connecting terminal and at the other end thereof a contact portion which can come into contact with a terminal of an electrical component, and between them, is formed with a first spring portion beside said external connecting terminal and second spring portion beside said contact portion, said contact pins being disposed in parallel on a base plate while mutually insulated from each other, and

a slide member which has a first position defining portion and a second position defining portion which are respectively brought into contact with said first spring portion at a detachable position and a loading position for said electrical component and receiving a position restriction by its urging force and has an engagement portion which moves said contact portion to said detachable position by pushing said second spring portion toward the first spring portion from its elastic neutral position.

21. A socket assembly as set forth in claim 20, wherein the urging force of said first spring portion acts on substantially a vertical direction of that loaded said electrical component, and the urging force of said second spring portion acts on substantially a side surface direction of the loaded said electrical component, and at the time of loading of said electrical component, said engagement portion pushes said second spring portion from

052266-0020

its neutral position to a second direction, whereby said contact portion comes into a sliding contact with the terminal of said electrical component.

22. A socket assembly as set forth in claim 20, wherein at the time of loading of said electrical component, said slide member is able to push a side surface of said electrical component.

23. A socket assembly as set forth in claim 20, wherein said slide member is held from the vertical direction by an extension portion extended from between said external connecting terminal and said first spring portion and said first spring portion so that it can move laterally.

24. A socket assembly as set forth in claim 20, wherein at the loading position for said electrical component, said electrical component is held from the vertical direction by said contact portion and a tip portion of said extension portion, and at least one of said contact portion and said tip portion is used as an electrically conductive terminal with said electrical component.

25. A socket assembly as set forth in claim 20, wherein said slide member is provided at opposite end portions thereof in a direction perpendicular to its movement direction with an engagement portion, and said slide member is moved by an external device via said engagement portion.

06788/002004/EN8201DIII-US

26. A socket assembly as set forth in claim 20, wherein a plurality of ribs are disposed in parallel on said slide member, and said row-forming contact pins are isolated from each other by said ribs.

27. A socket assembly comprising:

a plurality of contact pins arranged in parallel on a base plate in such a manner that a spring portion is formed between a contact portion that can come into contact with a terminal of a loaded electrical component and an external connecting terminal and an engagement portion is formed between said contact portion and said spring portion; and

an actuation shaft member arranged along the parallel arrangement direction of said contact pins and given a rotation force by a spring member, said actuation shaft member having an arm at at least one end thereof and being formed at a circumferential surface thereof with engagement portions which are engaged with the engagement portions of said respective contact pins,

wherein either one of the engagement portion of said contact pin and engagement portion of said actuation shaft member being made convex and the other being made concave,

whereby said actuation shaft member sequentially effects two engagements in its rotation direction with respect to said contact pins so that said contact portions are brought into contact with or separated from said electrical component by one of the engagements portions and are slid with respect to said electrical component at the time of loading by the other engagement.

CONTINUATION

-139-

28. A socket assembly as set forth in claim 27, wherein the engagement portion of said actuation shaft member has a concave shape and eth engagement portion is formed so as to push against a side surface of said electrical component at the time of loading of said electrical component.

29. A socket assembly as set forth in claim 20, wherein said contact pin is formed with an extension portion extended from between said external connecting terminal and said spring portion, said actuation shaft member being sandwiched by the engagement portion of said contact pin and said extension portion.

30. A socket assembly as set forth in claim 28, wherein said electrical component is sandwiched by said contact portion and a tip portion of said extension portion at a loading position, and at least one of said contact portion and said tip portion acts as an electrical conductive terminal with said electrical component.

31. A socket assembly as set forth in claim 27, wherein said spring portion is constituted by a first spring portion provided at a side of said contact portion and a second spring portion provided at a side of said external connecting terminal.

32. A socket assembly as set fourth in claim 27, wherein a plurality of ribs are disposed in parallel on said actuation shaft member, and said contact pins are isolated by said ribs, respectively.

SEARCHED
INDEXED
MAILED
FILED

-140-

33. A socket assembly as set forth in claim 27, wherein said base plate is provided with a means of suppressing the rotation of said actuation shaft member by said spring member at a predetermined angular position.

34. A socket assembly as set forth in claim 27, wherein a cover member attached to said base plate so that it can vertically move can rotate said actuation shaft member against the force of said spring member via said arm.